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EXAMINER	
GAMETT, DANIEL C	

ART UNIT	PAPER NUMBER
1647	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,648	ELIA, JAMES P.	
	Examiner	Art Unit	
	Daniel C. Gamett, PhD	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *159, 161-190, 193-223* is/are pending in the application.

4a) Of the above claim(s) *168-187 and 200-223* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *159, 161-167, 188-190, and 193-199* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendments of 06/04/2007 have been entered in full. Claims 160, 191, and 192 are cancelled. Claims 168-187 and 200-223 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Claims 159, 161-167, 188-190, and 193-199 are under examination insofar as they read upon a method of treating arthritis comprising administering cells.

Rejection withdrawn

2. Rejection of Claims 164 and 196 under 35 U.S.C. 112, second paragraph, as being indefinite is withdrawn. Upon further consideration, it is evident that the term "blood stem cell" is not necessarily indefinite, but is simply very broad, encompassing any kind of stem cell that might be found in any sample of blood.

Priority

3. The previous office action included a finding that priority document Application 09064000 does not provide an enabling disclosure for methods of treating arthritis or avascular necrosis comprising administration of cells, and therefore this earlier applications does not comply with the requirements of the first paragraph of 35 U.S.C. 112 with respect to claims 159-167 and 188-199. In the response filed 06/04/2007, Applicant points to several sections from the specification in application 09/064000 as providing enabling support for the claims under consideration. Applicant's argument has been fully considered but is not persuasive because these sections are identical to corresponding sections of the instant specification. The scope of

enablement of the instant application is supplied solely by that which is known the art, based on disclosures that occurred after the filing of application 09/064000. As the instant specification does not provide enablement for the claims under consideration, neither can priority document application 09/064000.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Rejection of Claims 159, 161-167, 188-190, 193,194, and 196-199 under 35 U.S.C. 112, first paragraph, is maintained, with modifications necessitated by Applicant's amendment. The rejection of record set forth a scope of enablement that includes treating avascular necrosis by administration of bone marrow cells, osteogenic precursor cells or mesenchymal stem cells. It was particularly noted that this scope of enablement is provided entirely by that which is known in the prior art, with no contribution from the instant specification. The rejection also holds that the instant specification does not reasonably provide enablement for treatment of all forms of arthritis with all kinds of stem cells, cloned cells, or cultured cells.

6. Applicant has amended independent claims 159 and 188 to recite a growth factor selected from the group consisting of cells, cellular products, and derivatives of cellular product. Prior art of record teaches that BMP, FGF, and TGFβ, have been used to treat arthritis (U.S. Patent 5,827,289, of record). Insofar as these substances are "cellular products, and derivatives of cellular product", then the scope enablement provided by the prior should include these

substances along with the bone marrow cells, osteogenic precursor cells or mesenchymal stem cells noted previously. This maintained rejection holds that the instant specification does not reasonably provide enablement for treatment of all forms of arthritis with all kinds of stem cells, cloned cells, cultured cells, cellular products, and derivatives of cellular products.

7. Applicant's arguments filed 06/04/2007 have been fully considered. Applicant first points out (p. 14 of the remarks) that claim 195 is drawn to a species within the enabled scope, and therefore this claim should not have been included in the rejection. This is persuasive because claim 195 has been rejected as being anticipated by prior art.

8. Applicant next argues (p. 14 and again on p. 17) that, "the Examiner has failed to consider the disclosure provided by Applicant's specification as a whole" and "The Examiner erroneously restricted such factual determination to only the claimed species of growth factor. Such determination ignores those portions of the specification describing a broader generic invention and the use of other growth factor species, such as genes/nucleic acids; the treatment of other organs; and specific artery growth sites." This is not persuasive, first, because the claims are not drawn to treatment of other organs; they are drawn to methods for treating arthritis and avascular necrosis. Applicant is further reminded that methods employing cells, ECM, genes, physiological nutrient mixture, proteins, and various combinations thereof have been held to be patentably distinct in the Requirement for Restriction/election mailed on 10/23/2006. Thus, even though the lexicon of the instant specification seeks to include all of these agents in the broad genus of "growth factors", the art recognizes them to be structurally and functionally distinct entities. Independent claims 159 and 188 were held to belong to patentably distinct groups, *in part*, insofar as they read upon methods that employ these structurally and functionally distinct

entities and separately classified agents. Applicant has elected "cells". The instant claims are under examination insofar as they read upon a method of treating arthritis comprising administering cells. This does not mean that the Examiner is wearing blinders or treating enablement issues formalistically rather than substantively as Applicant suggests on page 17. It should be clear from the rejection of record and from the following that the entire specification has been considered. As Applicant points out on page 19, it is incumbent upon the Examiner to determine what subject matter each claim recites. Of the claims under consideration, only claims 159 and 188 read upon to administration of anything other than a cell. The breadth of claims 159 and 188 was addressed in the rejection of record and is further addressed below.

9. Regarding the guidance for the use of cells in the claimed methods, Applicant (p.15-16) directs attention to several sections of the specification, which are asserted to be related to Applicant's generic invention of treating arthritis and avascular necrosis with a growth factor. Applicant generally argues that whenever the specification uses the term "growth factor" the reader should think "cells". The concept of "cell as a specie of growth factor" relies on the teaching that living organisms can be growth factors (specification p. 4, lines 13-14) and the fact that cells are organisms. Therefore, *in the lexicon of this specification*, "cells" may be a subgenus of "growth factor". This is important, because the concept of "cell as a specie of growth factor" does not exist in the art outside of the instant application (and others from the same Applicant). Even within the lexicon of the instant specification, however, it should be clear that "cells", "genetic material", and various specifically named polypeptide growth factors (examples given in the paragraph bridging pages 4-5 of the specification) are so structurally and functionally distinct that they must belong to distinct subgenera within "growth factors". It is not reasonable

to propose that all growth factors within this broad definition are equally usable for all purposes. Therefore, in the absence of specific instruction to do otherwise, all references in the specification to "growth factor" are given their ordinary meaning in the art, which is "a factor that acts upon cells", not "a factor that is a cell". Furthermore, even the subgenus of "cells" is indeterminably large. According to definition of "growth factor" in the instant specification, the cell of claims 159 or 188 could be any of the more than 200 cell types of the human body, or any bacterial cell, or any cell from any of the more than 1 million species of living organism. The specification does not lead the skilled artisan to the particular subgenus of "cells", let alone any particular kind of cell, whenever growth factors are mentioned. For example, Applicant (p.16) points to page 28, lines 12-22 as an example of the guidance given for the use of cells to treat avascular necrosis. This was addressed in the rejection record. The rejection of record points out that the instant specification clearly directs the skilled artisan toward the use of polypeptide growth factors, not whole cells, for the treatment of avascular necrosis. This section teaches that, "Avascular necrosis can be corrected with the insertion of a gene(s) and/or growth factor or other genetic material in the body... VEGF or BMP genes, or VEGF or BMP growth factors produced by VEFG or BMP genes, respectively, or any other desired genetic based material can be inserted to regrow blood vessels and/or bone...Insertion of a growth factor (or its gene counterpart) in the body can be utilized to prevent and/or reduce inflammation. *Growth factors control cell migration.* As such, they can be powerful cell inhibitors to prevent inflammatory cells from migrating into an area. Such an application has major usefulness in the treatment of arthritis or other autoimmune or inflammatory diseases." The added emphasis points out that the specification uses 'growth factors' according to its ordinary meaning, "a factor that acts upon

cells", not "a factor that is a cell". There simply is no rational scientific basis for one of skill in the art to read "gene(s) and/or growth factor or other genetic material in the body... VEGF or BMP genes, or VEFG or BMP growth factors produced by VEFG or BMP genes" and think "stem cell", without being specifically prompted to do so. The instant specification does not provide that prompting, and in fact suggests otherwise as shown by the emphasized sentence. Even if, upon reading the above passage, the skilled artisan were to conceive an idea to use stem cells in place of the agents described, this does not provide guidance for how to do it. There is no scientific basis, either in the instant specification or in the art as a whole, for the assertion that one of skill in the art would read a teaching about genes or protein growth factors and thereby gain specific guidance as to how to use cells for the same purpose.

10. Applicant (p.16) draws particular attention to the specification at page 26, line 3, to page 27, line 3, which states, "Organs and/or tissues can be formed utilizing the patient's own cells... A cell nutrient culture may or may not be utilized depending on the desired functional outcome (i.e., growth of an artery, of pancreatic Islet cells, of a heart, etc.) or other circumstances." Although this passage cannot be considered a specific teaching of the use of cells to treat arthritis or avascular necrosis, it does at least obliquely suggest the idea of using cells for related purposes. It does not, however, suggest the specific use of bone marrow stem cells, or stem cells of any kind, or a cloned cell, or a germinal cell, as required in the dependent claims under consideration. Even if this is construed as to suggest the use of cells to treat arthritis or avascular necrosis, the specification does not teach one how to achieve this goal. This passage tosses out the idea that something can be done and then invites the skilled artisan to figure out how to do it.

11. Similarly, Applicant points to page 6, lines 6-13 of the specification. These lines mention cells for the purpose of providing "the necessary *in vivo* and *in vitro* cascade of genetic material once an implanted master control gene's transcription has been activated." Whatever this means, it certainly does not suggest the use of cells to treat arthritis or avascular necrosis, nor does it provide any guidance as to how to use cells to treat arthritis or avascular necrosis. In fact, the next sentence states, "Likewise, any host cell, cloned cell, cultured cell, or cell would work." Thus, far from guiding the skilled artisan on how to perform a specific method, this section of the specification would have the skilled artisan believe that any cell can do anything.

12. Page 22, line 5 to page 24, line 15, teaches that "appropriate cells, genes, and/or growth factors (or other genetic material)" are to be placed adjacent the dead cardiac muscle, onto or into the pericardium. This does not enable or even suggest the use of any kind of cell for treating arthritis and avascular necrosis. Note further that "cells," "genes", and "growth factors" are listed as distinct entities. This usage is consistent with the ordinary meanings of these terms but teaches away from the implicit inclusion of "cells" within "growth factor" that Applicant repeatedly relies upon.

13. Page 29, lines 8-14, mentions cells as they are targets for the action of growth factors inserted into the body. This does not enable or even suggest the use of any kind of cell for treating arthritis and avascular necrosis. It also does not suggest that the "growth factor" to be inserted is itself a cell.

14. Page 32, line 20 to page 37, line 21, and page 44, lines 7-17 comprise Examples 17, 18, and 35, which teach administration of VEGF cDNA or other genetic material or "growth factor" for the purpose of causing artery formation. " These sections do not suggest that the "growth

factor" to be inserted is itself a cell. In order to construe these passages as teaching the use of stem cells, one would have to construe the term "genetic material" as directing the skilled artisan to stem cells. Such an interpretation would be at odds with the normal usage of these terms in the art and inconsistent with the way the terms "genetic material" and "stem cell" are used in the instant specification.

15. Many of the cited sections do not even contain the word "cell" or only use the term in passing without any mention of using the cells in any treatment (page 4, lines 1-5; page 4, line 8 to page 5, line 20; page 21, lines 23-24). Page 17, line 2 to page 20, line 8, as far as this section can be understood, mentions cells only as sources for genes, not for use as agents of any treatment.

16. Applicant points out (p.21) that claims 159-167 are directed to treating a symptom or sign of arthritis, *i.e.*, inflammation. It is, therefore, instructive to consider the teachings in the specification relative to inflammation. The following lists every instance of the word "inflammation" in the body of the specification; bracketed numbers refer to locations in the published application:

> *a.* [0007]. Organogenesis methods may be further directed and controlled by utilizing physiological mediums, capable of augmenting organogenesis, capable of inhibiting organogenesis, capable of reducing of inflammation, and capable of supercharging cellular environment thereby activating cellular response.
> *b.* [0013] This invention also relates to treating arthritis by inserting a growth factor at a desired location in the body of a human patient to reduce inflammation.
> *c.* [0107] The insertion of a growth factor (or its gene counterpart) in the body can be utilized to prevent and/or reduce inflammation.
> *d.* [0179] Angiogenesis inhibitors (whether natural or introduced) would precipitate and/or result in negative, or restrictive, processes to the organogenesis process of growing an artery. It can result in cell death and/or inflammation. This process does not facilitate cell growth, cell proliferation, cell survival, etc; and, therefore, it is considered negative to the organogenesis process. Such angiogenesis (organogenesis) inhibitors could mediate apoptosis, thus stopping the growth of new blood vessels and/or secondarily mediate or

inhibit inflammation during and/or following organogenesis. Neither apoptosis nor inflammation is conducive to the growth of an artery. In fact, they would work against a genetic material, such as a growth factor, to cause the growth of an artery. Apoptosis and inflammation may sometimes work synergistically against artery formation.

e. [0185] Suppressing or inhibiting FasL has a secondary effect. Full-length, membrane-bound FasL is a predominant mediator of inflammatory effects in vivo. This inflammation is secondary to FasL-mediated stimulation of host cells. The process depends on FasL-mediated production of neutrophil chemoattractants by Fas-sensitive cells, rather than on any direct effect of FasL on the neutrophils themselves.

f. [0186] Structurally, Fas has three cystine-rich extracellular domains and an intracellular "death domain" of approximately 80 amino acids, which is required for apoptosis signaling. Blocking of the Fas receptor or of the Fas ligand prevents apoptosis and secondarily inflammation.

g. [0187] An example of utilizing a physiological medium in conjunction with a genetic material, such as a growth factor, to control and direct, and thus overcome, two negative organic processes or phenomena effecting or involved with angiogenesis is illustrated below. Controlling and directing the negative processes of apoptosis and inflammation are important to the growth of an organ, such as an artery, and represent an improved method of organogenesis. New blood vessel growth relies upon a balance of proteins that either induce or inhibit new growth of the endothelial cells that form the walls of new blood vessels.

h. [0188] When a genetic material is utilized to grow an artery, endothelial cells, activated by the genetic material, express a cell surface protein receptor called Fas which makes the cells sensitive to angiogenesis inhibitors in their environment. Inhibitors such as thrombospondin-1 (TSP1) or pigment epithelial-derived factor (PEDF), activate the ligand of Fas called FasL. When the cell surface protein FasL fits into the Fas receptor a molecular cascade occurs in the cell that results in cell death, or apoptosis. However, if a physiological medium containing, for example, a caspace inhibitor is used in conjunction with the genetic material to grow the artery, an improved organogenesis method results. The apoptosis effect precipitated by FasL (which is blocked by the caspace inhibitor) can be prevented. Also prevented is the secondary negative effect of inflammation. Removal of the caspace inhibitor from the physiological medium permits apoptosis, thus stopping arterial growth once a desire state is obtained.

i. [0201] By way of example, and not limitation, positive processes or phenomena in the context of organogenesis controlled and directed by a physiological medium are: cell growth, cell division, cellular aggregation, development of cellular form, development of aggregate cellular form, cell secretion, promotion of cellular survival, promotion of cellular proliferation, promotion of cellular differentiation, protein transport, and signal transduction, etc. By way of example, and not limitation, a physiological medium can utilize or include nutrients which provide metabolic sustenance; antioxidants to fight increased levels of oxidants within the cell; genetic material which acts on a cell and/or another cell (including precursors, inducers, direct inducers, etc.); proteins which enslave cellular machinery; and, anti-apoptotic agents. By way of example, and not limitation, negative processes or phenomena are the opposite of

the aforementioned positive processes (for example, cell death, inflammation, cell defects, etc.) and are caused by: increased levels of oxidants within a cell; lack of cellular nutrients; damage to DNA and/or RNA by oxidants and other agents (such as ultraviolet light, x-rays, chemotherapeutic drugs, etc.); failure of genetic materials to influence a cell; lack of proteins to enslave cellular machinery; and pro-apoptotic agents.

j. [0220] The methods of the invention are also applicable for accelerating, strengthening, and improving the healing of wounds (whether natural or caused by surgical interventions). Such methods result in an improvement in appearance, including less scarring of the healed wound, as well as reducing inflammation and other post-wound and post-operative complications. The above improvements are the result of the accelerated and enhanced growth of blood vessels at the wound site of a human body. Processes involving the placement of genetic material, such as a growth factor, and a physiological medium to direct and control, and thus assist, the body's healing process are contemplated. Such processes include anti-apoptotic, agonistic, anti-inflammatory, positive, augmenting, and supercharging.

k. [0221] For example, the organogenesis methods for reducing apoptosis could be utilized with a supercharging method, an inflammation -reducing method, an organ-growth inhibiting method, an organ-growth augmenting method, etc. Likewise, any of the other method(s) could be used with another method(s), as appropriate.

17. It is clear from the above that the specification does not even once suggest reducing inflammation by administering any kind of cell. Where cells are mentioned, it is always as the target or responder to some other agent. Even within the lexicon of this specification, wherein "cell" is a subgenus within "growth factor", the specification never directs the skilled artisan to select that subgenus. Even if one selects the subgenus "cell", the specification does not guide as to which of the thousands of cells available within the broad definition of "growth factor" the skilled artisan is to use to reduce inflammation nor does the specification guide the skilled artisan in using any particular cell for this purpose.

18. Therefore, the sections of the specification that Applicant has identified as teaching a method of using cells to treat arthritis (which is really over 100 different diseases) or avascular necrosis require the skilled artisan to select "cells" out of an infinite genus of "growth factors" by construing terms of the art in a manner that is inconsistent with their ordinary meaning. Having

arrived at "cell", the skilled artisan then has to determine which cell to use for the specific purpose, when no specific guidance is given. While the prior art provides examples wherein specific forms of arthritis are treated with specific types of cells, instant specification does not contribute any technical or conceptual advancement toward these goals beyond that which was already known in the art. The courts have stated that patent protection is granted in return for an enabling disclosure, not for vague intimations of general ideas that may or may not be workable. Tossing out the mere germ of an idea does not constitute an enabling disclosure. Reasonable detail must be provided in order to enable members of the public to understand and carry out the invention. See *Genentech v. Novo Nordisk A/S* (CAFC) 42 USPQ2d 1001 (1997). There is no evidence in the instant disclosure that Applicant has ever reduced arthritic inflammation or grown a blood vessel to correct avascular necrosis by inserting any kind of cell into so much as an experimental animal. The instant disclosure does not guide the skilled artisan in performing such treatments; it does not even clearly suggest that any kind of cell should be used for such purposes. The level of skill in the art is indeed high. If a patent is to be issued for methods of treating arthritis by administering cells, it should be issued to the highly skilled artisan who performs the experimentation and provides detailed information to teach others how to do it.

19. Claims 159, 161-167, 188-190, and 193-199 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The fact that a patent is directed to method entailing use

of a compound, rather than to the compound *per se*, does not remove patentee's obligation to provide description of the compound sufficient to distinguish infringing methods from noninfringing methods (University of Rochester v. G.D. Searle & Co., 69 USPQ2d 1886 (CAFC 2004)). In this case, the claims are drawn to methods that comprise administration of genus of substances recited as "growth factor selected from the group consisting of cells, cellular products, and derivatives of cellular product." To provide evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the term "cell" is well understood but the "cellular products and derivatives of cell product" are unlimited by structure. A cell product could be of any protein, nucleic acid, or lipid. A derivative of a cell product could be any synthetic compound of any class that has so little as a single carbon atom originating from a cellular molecule. The specification mentions several growth factors by name but cannot possibly describe a sufficient number of species to represent the infinitely large genus of cellular products and derivatives of cell product.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

21. Claims 159 and 188-192 remain rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,827,289, issued October 7, 1998. Applicant's arguments filed 06/04/2007 have been fully considered but they are not persuasive. The previous office action indicated that this rejection could be overcome by amending the claims to recite "cell" or "cells" instead of "growth factor". Applicant has not done this. The claims still recite "inserting a *growth factor* selected from the group consisting of cells, cellular products, and derivatives of cellular product. The growth factors taught in the '289 patent include BMP, FGF, and TGFβ, agents known to promote bone growth, angiogenesis, and anti-inflammatory activities, which are cellular products or derivatives of cellular products. Therefore, the cited reference anticipates the amended claims.

22. Claims 159, 161-164, 167, 188-196 and 199 remain rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,300,127. [The inadvertent omission of this reference from form PTO-892 in the prior office action is acknowledged and corrected herein.] Applicant's arguments filed 06/04/2007 have been fully considered but they are not persuasive. First, the claim of priority of the instant application to the filing date of application 09/064000 has been denied, so the '127 patent is prior art under 35 U.S.C. 102(b). Applicant further argues that the 127 patent does not anticipate the instant claims because it specifically teaches reimplanting cells transfected with nucleic acid that encodes LMP or HLMP for inducing new bone in treating

avascular necrosis in the hip or knee and does not teach inserting non-transfected cells for any purpose. This is not persuasive because the instant claims do not exclude transfected cells. Applicant further argues that claim 159 calls for inserting cells, such as mononuclear bone marrow cells, which are described in the specification to control cell migration and thus prevent inflammatory cells from migrating into the arthritis afflicted areas. This is not persuasive because, first, claim 159 does not recite mononuclear cells, it is not limited to mononuclear cells, it is not even limited to cells. Secondly, the specification does not teach that bone marrow cells or any kind of cell controls cell migration and thus prevent inflammatory cells from migrating into the arthritis afflicted areas. This activity is taught to be performed by growth factors ([0107] of the published application). Nothing in the specification points to that a bone marrow cell, or any kind of cell, as a species of growth factor that will control cell migration and thus prevent inflammatory cells from migrating into the arthritis afflicted areas. Therefore, the claims as written do not distinguish the cells to be administered from those described in the '127 patent. Administering the same agent to the same patient population will inherently lead to all of the same results.

23. Claims 159, 161-163, and 167 remain rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6835377. Applicant's arguments filed 06/04/2007 have been fully considered but they are not persuasive. The '377 patent teaches a method for regenerating articular cartilage defects in a host in need thereof, comprising administering to said host cultured human mesenchymal stem cells (see claim 1). The method is for repair of cartilage damaged as part of the degenerative effects of osteoarthritis. Therefore, the '377 patent teaches a method of treating arthritis. The instant claims as written do not distinguish the cells to be

administered from those described in the '377 patent. Administering the same agent to the same patient population will inherently lead to all of the same results.

Conclusion

24. No claims are allowed.

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel C. Gamett, PhD whose telephone number is 571 272 1853. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath N. Rao can be reached on 571 272 0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DAVID ROMEO/
PRIMARY EXAMINER
ART UNIT 1647

DCG
Art Unit 1647
10 August 2007